

REMARKS

Claims 1-12, 14-38 and 40-54 are pending and under consideration in the above-identified application. Claims 13 and 39 were previously cancelled.

In the Office Action of December 18, 2006 (the “present Office Action”), claims 1-12, 14-38 and 40-54 were rejected. No claim has been amended or cancelled in this Response. Accordingly, claims 1-12, 14-38 and 40-54 remain at issue.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

In the present Office Action, the Examiner stated that claims 1-12, 14-38, and 40-54 were rejected under 35 U.S.C. § 103(a) as being purportedly unpatentable in view of *Nafeh* (US 5,343,251), *Kanda* (US 5,930,446) and *Merriman et al* (US 2002/0006268). However, the Examiner implicitly asserts that independent claims 1 and 27 stand rejected based on the combined teachings of *Nafeh* and *Takahashi* (US 5,966,495). Applicants traverse these rejections.

In the Response To The August 10, 2006, Final Office Action submitted on September 27, 2006 (the “27 Sept 2006 Response”) with the Request For Continued Examination (“RCE”), Applicants presented arguments (which are incorporated herein by reference) that neither *Nafeh*, *Kanda*, nor *Merriman* (alone or in any combination) teach all of the limitations of independent claims 1 and 27. In the present Office Action, the Examiner fails to rebut or comment on Applicants’ arguments with regard to *Nafeh*, *Kanda*, and *Merriman* each failing to teach all the limitations of claims 1 and 27. In particular, the Examiner fails to rebut Applicants’ arguments

that *Nafeh, Kanda*, and *Merriman* each fail to teach the claim 1 limitation of “an index information extracting means” or structure for performing the function of “extracting information from the first signal section to be used as a user-selectable index representing the recorded first signal” or otherwise point out where such feature is present in the cited art. Although the Examiner states that “Applicants’ arguments with respect to the remaining pending claims have been considered but are moot in view of the new ground(s) of rejection,” the Examiner re-asserts that claims 1-12, 14-38, and 40-54 stand rejected under 35 U.S.C. § 103(a) as being purportedly unpatentable by in view of *Nafeh, Kanda* and *Merriman et al.*

Applicants maintain their arguments as presented in the 28 Sept 2006 Response and request that the Examiner point out where each and every limitation of claim 1 and 27 are disclosed or fairly suggested by the cited art of *Nafeh, Kanda*, and *Merriman*.

Applicants also traverse the Examiner’s implicit assertion that independent claims 1 and 27 are unpatentable based on the combined teachings of *Nafeh* and *Takahashi*.

With respect to independent claim 1 and with reference to the exemplary embodiment depicted in Figure 1A, Applicants claim a signal processing device having the following limitations:

a first signal section detecting means (202) for detecting a first signal section (202a) from an input signal (200a) including at least the first signal section and the remaining signal section on a time division basis;

a first signal extracting means (201) for extracting a first signal (201a) in the first signal section from the input signal in accordance with a result of the detection by the first signal section;

a recording means (205) for recording each signal extracted from the input signal by the first signal extracting means (201);

*an index information extracting means (206) for extracting information from said first signal section to be used as a user-selectable index(206a) representing said recorded first signal; and
a display means (208) for displaying said index.*

Independent claim 27 has similar limitations to claim 1.

Applicants teach that the claim 1 signal processing device allows first signals (e.g., commercial messages) to be detected in and extracted from an input signal so that the first signals may be separated from the remaining signals (e.g., program segments) in the input signal based on respective characteristic values characterizing each first signal. *See Application*, at pgs. 3-4. Applicants further teach that the recording means stores each first signal in association with its respective characteristic values and the index information extracting means is adapted to extract information from each recorded first signal (and, in one implementation from the its respective characteristic values) to generate a user-selectable index (such as a the starting image, the cut point image, the cut point video image, the starting sound and/or the ending sound of the respective recorded first signal or commercial message). *See Application*, at pgs. 3-4 & pg. 18 line 19 - pg. 20 line 14. Applicants also teach that the claim 1 signal processing device allows a user to selectively access a recorded first signal or commercial message based on the displayed index corresponding to the recorded first signal. *See Application*, at pgs. 3-4 & pg. 20 line 15 - pg. 26 line 9.

The Examiner acknowledges that *Nafeh* fails to disclose “*an index information extracting means for extracting information from said first signal section to be used as a user-selectable index representing said recorded first signal and display means for displaying said index*” as

taught and claimed by the Applicants. However, the Examiner asserts that *Takahashi* teaches this missing limitation. Applicants respectfully disagree.

Contrary to Applicants' invention as claimed, *Takahashi* discloses a recording and reproducing apparatus that has an index generating circuit 54 for generating or deriving index information and an ID file 43 "in accordance with an instruction which is issued from a system controller 45 in accordance with an instruction to start or end recording which is inputted from the operating keys 46." (See *Takahashi*, Col. 12 lines 21-28; Col. 14 lines 29-41; Figs. 8 & 12) As shown in Fig. 13 of *Takahashi* the index information corresponds to coded levels I to IV "indicative of 'banner headline', 'head' and 'subhead'" of a recording stored in an AV data file 40. (See *Takahashi*, Col. 12 lines 47-65; Col. 14 lines 59-63; Figs. 8, 9, 12 & 13) *Takahashi* also discloses "generating a time file 53" to associate with each level index information code so that "if a data retrieval ... is performed by using the time file 53, it is possible to rapidly perform a retrieval operation based on an instant of time." (See *Takahashi*, Col. 14 lines 42-51)

Thus, Applicants submit that *Takahashi's* index generating circuit 54 does not correspond to the "*index information extracting means for extracting information from said first signal section to be used as a user-selectable index representing said recorded first signal*" as claimed in claims 1 and 27 by Applicants.

The Examiner asserts that *Takahashi* teaches "a system that extracts information as seen in Figure 19 s706." Applicants respectfully disagree.

Unlike Applicants' invention as claimed, *Takahashi* discloses that the "extract index" step s155 in Figure 15 and s706 in Figure 19 is executed during "a retrieval operation performed

during reproduction,” where “a search is made in the time file 53 to extract index information which satisfies the generated retrieval condition expression.” (See *Takahashi*, Col. 15 lines 28-37; Col. 19 lines 49-60; Figs. 15 and 19). This clearly is not a search performed in a first section of an input signal as claimed by Applicants.

Accordingly, Applicants submit that *Nafeh* and *Takahashi* (alone or in combination with each other or any other cited reference) fail to teach each limitation of claims 1 and 27 and respectfully request that the rejection of these claims be withdrawn.

Claims 2-12, 14-26, and 53 depend directly or indirectly from claim 1 and should be deemed allowable for at least the same reasons as claim 1. Claims 28-38, 40-52, and 54 depend from claim 27 and should be deemed allowable for at least the same reasons as claim 27. Accordingly, Applicants respectfully request that the rejection to the dependent claims 2-12, 14-26, 28-38, and 40-54 be withdrawn.

In addition, in the 27 Sept 2006 Response and in the previous two amendments (Amendment After Final July 13, 2006 and Amendment After Final dated April 24, 2006), Applicants asserted the following with respect to claims 2 and 28:

Applicants claim a “signal processing device” that has the following additional limitation: “a characteristic value extracting means for extracting a characteristic value characterizing the first signal from the detected first signal section, wherein said recording means records each characteristic value of the first signal in association with the first signal.” Applicants further teach that the first signal and each of the characteristic values of the first signal are provided to the

“index information extracting means” (e.g., the CM Index generating section 206) for generation of a respective a user-selectable index representing the extracted and recorded first signal so that the user may selectively view and/or hear the first signal (e.g., commercial message) represented by the user-selectable index. *See* Application, at pg. 19 line 4 - pg. 22 line 14.

Nafeh discloses an apparatus 10 for discerning a commercial message from a program message in an input signal 12 based on learned signal patterns associated with different classes of commercial and program messages so that the commercial messages can be eliminated (or attenuated) before being recorded on a VCR or displayed on a TV. *See Nafeh*, Col. 2:38 - Col. 3:57; Col. 5:29 - Col. 6:21; Col. 7:14-46. In particular, *Nafeh* discloses that “[t]he single output of the network [classifier 24 of apparatus 10] is used to make a decision as to whether the broadcast [or input signal 12] is either a commercial or a program, following a detected transition [in the broadcast or input signal 12]. Thus, *Nafeh* to disclose storing or recording the extracted first signal (e.g., the commercial message) of the input signal in association with each characteristic value of the first signal as required by claims 2 and 28. Accordingly, Applicants submit that claim 2 and 28 should each be deemed allowable for the each of the reasons given above.

In the present Office Action, the Examiner again fails to rebut Applicants’ arguments with respect to claims 2 and 28 and simply repeats the assertion made in the previous Final Office Action that *Nafeh* teaches this limitations of claims 2 and 28 without identifying why

Applicants' arguments are not persuasive or where the cited discloses this limitation or without providing new grounds for rejecting these claims.

Furthermore, in the 27 Sept 2006 Response and in the previous two amendments (Amendment After Final July 13, 2006 and Amendment After Final dated April 24, 2006), Applicants asserted the following arguments with respect to claims 18, 21, 44, and 47¹:

With regard to claims 18 and 44, Applicants claim a signal processing device and a method that each has the following limitation: *"a comparing means for comparing the characteristic values respectively characterizing two first signals recorded by said recording means and discarding one of the recorded two first signals when the characteristic values of the two first signals are determined to be substantially the same."* Applicants further teach and claim (in claims 21 and 46) that "the comparing operation" is performed *"on a basis of a distance as determined by using a predetermined distance scale between vectors corresponding to the two first signals [such as derived using the "minimum length prioritizing rule"], the respective vector of each of the two first signals formed from at least one of the amplitude of the signal in the first signal section, the spectrum of the signal in the first signal section, the linear prediction coefficient of the signal in the first signal section, the histogram of a predetermined component of the signal in the first signal section, the mean value of the predetermined component of the signal in the first signal section, a difference*

¹ Note claim 46 was incorrectly cited in the previous two amendments instead of claim 47, which has limitations similar to the limitations of claim 21.

between two predetermined signal components of the signal in the first signal section, the number of changes in the state of the signal in the first signal section and the time of a change in the state of the signal in the first signal section.” See Application, at pg. 67 line 9 - pg. 70 line 12; Figs 24-25. Applicants teach that the “[w]ith the minimum length prioritizing rule, the time section comprising a shorter CM candidate [or shorter first signal distance] is selected over one or more other CM candidates having a longer time section distances. See Application, at pg. 68 line 4-11; Figs 24-25.

Nafeh discloses that “[t]he single output of the network [classifier 24 of apparatus 10] used to make a decision as to whether the broadcast [or input signal 12] is either a commercial or a program” is derived from the “last (n+1) feature vectors” extracted from each “frequency band of interest” of an input audio and video signal, where “n” is the number of samples of the input signal. In particular, Nafeh discloses that the feature vectors are used to drive a “layered arrangement of artificial neurons in which each neuron of a given layer feeds all neurons of the next layer” and “all weighted inputs to the neurons [e.g., the feature vectors] are added” to derive the “single output” of the network classifier. Thus, Nafeh fails to disclose the limitation of claim 18 and 44 of “characterizing two first signals recorded by said recording means and discarding one of the recorded two first signals when the characteristic values of the two first signals are determined to be substantially the same.” Moreover, Nafeh fails to disclose

the limitation of claims 21 and 47 of performing a comparing operation between two first signals of an input signal based on "a distance as determined by using a predetermined distance scale between vectors corresponding to the two first signals." Accordingly, Applicants submit that claim 18, 21, 44 and 47 should each be deemed allowable for the each of the reasons given above.

In the present Office Action, the Examiner also fails to address Applicants' arguments with respect to claims 18, 21, 44 and 47 and simply repeats the assertion made in the previous two Final Office Actions that *Nafeh* teaches this limitations of claims 18, 21, 44 and 47 without identifying where these limitations are disclosed or fairly suggested in the cited art or why Applicants' arguments are not persuasive or without providing new grounds for rejecting these claims.

If the Examiner maintains that *Nafeh* teaches the limitations of claims 2, 18, 21, 28, 44 and 47, Applicants respectfully request that the Examiner address Applicants arguments to the contrary as presented for a third time in this Response.

II. Conclusion

In view of the above remarks, Applicants submit that all pending claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

The Commissioner is authorized to charge any fees which may be due or credit any overpayments to Deposit Account No. 19-3140.

Respectfully submitted,

Dated: April 11, 2007

By: /David R. Metzger/
David R. Metzger
Registration No. 32,919
SONNENSCHN NATH & ROSENTHAL LLP
P.O. Box 061080
Wacker Drive Station, Sears Tower
Chicago, Illinois 60606-1080
(312) 876-8000